2016

Nebraska Summary: S1026 Massey Ferguson 7720

Nebraska Tractor Test Laboratory
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SUMMARY OF OECD TEST 2949–NEBRASKA SUMMARY 1026
MASSEY FERGUSON 7720 DYNA VT DIESEL
CONTINOUSLY VARIABLE TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Diesel Consumption Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	D.E.F. Consumption Hp.hr/gal *(kW.h/l)*	D.E.F. Consumption Gal/hr *(l/h)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1103 rpm)						
178.8 *(133.3)*	2099	10.10 *(38.23)*	0.395 *(0.240)*	17.70 *(3.49)*	0.70 *(2.64)*	
Standard Power Take-off Speed (1000 rpm)						
197.8 *(147.5)*	1902	10.72 *(40.57)*	0.378 *(0.230)*	18.45 *(3.64)*	0.74 *(2.80)*	
Maximum Power (1 hour)						
198.7 *(148.2)*	1799	10.65 *(40.30)*	0.374 *(0.227)*	18.67 *(3.68)*	0.65 *(2.45)*	
VARYING POWER AND FUEL CONSUMPTION						
178.8 *(133.3)*	2099	10.10 *(38.23)*	0.395 *(0.240)*	17.70 *(3.49)*	0.70 *(2.64)*	Air temperature
152.7 *(113.9)*	2111	8.72 *(32.99)*	0.399 *(0.242)*	17.51 *(3.45)*	0.53 *(1.99)*	72°F *(22°C)*
115.2 *(85.9)*	2121	6.94 *(26.25)*	0.421 *(0.256)*	16.61 *(3.27)*	0.44 *(1.65)*	Relative humidity
76.8 *(57.3)*	2125	5.24 *(19.84)*	0.476 *(0.289)*	14.67 *(2.89)*	0.31 *(1.17)*	69%
38.6 *(28.8)*	2135	3.55 *(13.42)*	0.641 *(0.390)*	10.89 *(2.15)*	0.23 *(0.88)*	Barometer
--- ---	2142	2.27 *(8.61)*	--- ---	--- ---	--- ---	30.4" Hg *(102.9 kPa)*

Maximum torque - 646 lb.-ft. *(876 Nm)* at 1453 rpm
Maximum torque rise - 44.5%
Torque rise at 1700 engine rpm - 33%
Power increase at 1799 engine rpm - 11%

DRAWBAR PERFORMANCE
(Unballasted - Front Drive Engaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Power at Rated Engine Speed—Turtle 8									
138.9 *(103.6)*	11130 *(49.5)*	4.68 *(7.54)*	2098	4.2	0.503 *(0.306)*	13.90 *(2.74)*	198 *(92)*	36 *(2)*	29.9 *(101.3)*
75% of Pull at Rated Engine Speed—Turtle 8									
108.1 *(80.6)*	8315 *(37.0)*	4.87 *(7.83)*	2119	2.9	0.519 *(0.316)*	13.45 *(2.65)*	194 *(90)*	36 *(2)*	29.9 *(101.4)*
50% of Pull at Rated Engine Speed—Turtle 8									
73.4 *(54.7)*	5645 *(25.1)*	4.88 *(7.85)*	2131	1.7	0.601 *(0.366)*	11.62 *(2.29)*	192 *(89)*	36 *(2)*	29.9 *(101.4)*
75% of Pull at Reduced Engine Speed—Turtle 10									
109.3 *(81.5)*	8340 *(37.1)*	4.92 *(7.91)*	1357	2.8	0.465 *(0.283)*	15.02 *(2.96)*	185 *(85)*	36 *(2)*	29.9 *(101.4)*
50% of Pull at Reduced Engine Speed—Turtle 10									
73.0 *(54.4)*	5575 *(24.8)*	4.91 *(7.90)*	1363	1.6	0.492 *(0.300)*	14.19 *(2.80)*	180 *(82)*	36 *(2)*	29.9 *(101.4)*

Location of tests: IRSTEA, Centre d'Antony, 1 rue Pierre-Giles de Gennes, CS 10030 92761 Antony, Cedex France

Dates of tests: February, 2016

Manufacturer: AGCO S.A. ZA, n2, BP 60307, Avenue Blaise Pascal, 60026 Beauvais, Cedex, France

CONSUMABLE FLUIDS: **Fuel** No. 2 Diesel **Specific gravity converted to 60°/60°F** ***(15°/15°C)*** 0.838 **Fuel weight** 6.98 lbs/gal *(0.836 kg/l)* **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.08 lbs/gal *(1.091 kg/l)* **Oil SAE** 15W40 **API service classification** CJ-4 **Transmission and hydraulic lubricant** BP Terrac Tractan 9 10W/40 **Front axle lubricant** SAE 85W140 API GL-5

ENGINE: Make AGCO Power Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and SCR (selective catalyst reduction) technology **Serial No.** Z0018 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.252" x 4.724" *(108.0 mm x 120.0 mm)* **Compression ratio** 17.4 to 1 **Displacement** 402 cu in *(6596 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** D 242 901 **Tread width** rear 52.8" *(1340 mm)* to 87.8" *(2230 mm)* front 52.8" *(1340 mm)* to 87.8" *(2230 mm)* **Wheelbase** 117.0" *(2973 mm)* **Hydraulic control system** direct engine drive **Transmission** CVT. A combination of mechanical and hydrostatic sections allow an infinite speed adjustment within the ranges noted. The transmission has two mechanical ranges. **Nominal travel speeds mph** ***(km/h)*** forward: Low range 0-19 *(0-30)*, high range 0-25 *(0-40)* reverse: Low range 0-19 *(0-30)*, high range 0-19 *(0-30)* **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1868 engine rpm or 1000 rpm at 1903 engine rpm **Unladen tractor mass** 18180 lb *(8250 kg)*

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)
MAXIMUM POWER AT SELECTED TRAVEL SPEEDS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					Turtle 3				
72.1	16120	1.68	2130	14.5	0.604	11.56	181	34	29.9
(53.8)	*(71.7)*	*(2.70)*			*(0.368)*	*(2.28)*	*(83)*	*(1)*	*(101.3)*
					Turtle 4.5				
99.9	15870	2.36	2117	12.7	0.593	11.78	189	34	29.9
(74.5)	*(70.6)*	*(3.80)*			*(0.361)*	*(2.32)*	*(87)*	*(1)*	*(101.3)*
					Turtle 6.5				
155.0	15375	3.78	1980	11.1	0.475	14.72	192	36	29.9
(115.6)	*(68.4)*	*(6.09)*			*(0.289)*	*(2.90)*	*(89)*	*(2)*	*(101.3)*
					Turtle 8				
162.4	12700	4.80	1854	6.5	0.459	15.22	198	36	29.9
(121.1)	*(56.5)*	*(7.72)*			*(0.279)*	*(3.00)*	*(92)*	*(2)*	*(101.3)*
					Turtle 10				
164.8	10025	6.16	1830	3.9	0.453	15.43	187	36	29.9
(122.9)	*(44.6)*	*(9.92)*			*(0.275)*	*(3.04)*	*(86)*	*(2)*	*(101.3)*
					Turtle 13				
155.4	7420	7.85	1847	3.2	0.483	14.47	189	39	30.2
(115.9)	*(33.0)*	*(12.63)*			*(0.294)*	*(2.85)*	*(87)*	*(4)*	*(102.2)*
					Turtle 15				
150.2	6135	9.18	1842	2.4	0.498	14.01	196	35	30.2
(112.0)	*(27.3)*	*(14.77)*			*(0.303)*	*(2.76)*	*(91)*	*(6)*	*(102.2)*
					Rabbit 9				
143.1	10635	5.05	1809	4.0	0.514	13.59	190	46	30.2
(106.7)	*(47.3)*	*(8.12)*			*(0.313)*	*(2.68)*	*(88)*	*(8)*	*(102.2)*
					Rabbit 12				
153.8	8025	7.19	1832	2.7	0.479	14.57	192	46	30.2
(114.7)	*(35.7)*	*(11.57)*			*(0.292)*	*(2.87)*	*(89)*	*(8)*	*(102.2)*
					Rabbit 15				
155.3	6315	9.22	1832	2.2	0.478	14.62	192	45	30.2
(115.8)	*(28.1)*	*(14.84)*			*(0.291)*	*(2.88)*	*(89)*	*(7)*	*(102.2)*
					Rabbit 17				
151.0	5400	10.49	1794	2.0	0.476	14.67	199	45	30.2
(112.6)	*(24.0)*	*(16.88)*			*(0.290)*	*(2.89)*	*(93)*	*(7)*	*(102.2)*
					Rabbit 20				
146.7	4640	11.86	1833	1.4	0.492	14.21	199	45	30.2
(109.4)	*(20.6)*	*(19.09)*			*(0.299)*	*(2.80)*	*(93)*	*(7)*	*(102.2)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE: The performance figures on this report are the result of replacing the electronic engine control module of the Massey Ferguson 7719 with the Massey Ferguson 7720 module.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's 3 point lift claim of 16700 lbs *(7575 kg)*. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2949,** Nebraska Summary 1026, June 16, 2016.

Roger M. Hoy
Director

M.F. Kocher
S.K. Pitla
J.D. Luck
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive Engaged dB(A)	Disengaged dB(A)
At no load in Turtle 8	70.0	70.0
Bystander		--

TIRES, BALLAST AND WEIGHT

	Tested without ballast
Rear Tires - No., size, ply & psi*(kPa)*	Two 620/70R42;**;15*(100)*
Front Tires - No., size, ply & psi*(kPa)*	Two 480/70R30;**;15*(100)*
Height of Drawbar	19.7 in *(500 mm)*
Static Weight with operator - Rear	10770 lb *(4885 kg)*
- Front	7585 lb *(3440 kg)*
- Total	18355 lb *(8325 kg)*

HYDRAULIC PERFORMANCE

CATEGORY: III
Quick Attach: None
OECD Static test

Maximum force exerted through whole range:	15105 lbs *(67.2 kN)*	
i) Sustained pressure of the open relief valve:	2870 psi *(198 bar)*	
	Standard Pump	Optional pump
	29 GPM *(110 l/min)*	50 GPM *(190 l/min)*
	two outlet sets combined	two outlet sets combined
ii) Pump delivery rate at minimum pressure:	29.9 GPM *(113.0 l/min)*	52.5 GPM *(198.8 l/min)*
iii) Pump delivery rate at maximum		
hydraulic power:	27.8 GPM *(105.3 l/min)*	47.6 GPM *(180.2 l/min)*
Delivery pressure:	2490 psi *(172 bar)*	1855 psi *(128 bar)*
Power:	40.3 HP *(30.0 kW)*	51.5 HP *(38.4 kW)*
	single outlet set	single outlet set
ii) Pump delivery rate at minimum pressure:	29.4 GPM *(111.2 l/min)*	32.9 GPM *(124.6 l/min)*
iii) Pump delivery rate at maximum		
hydraulic power:	26.9 GPM *(101.9 l/min)*	30.0 GPM *(113.8 l/min)*
Delivery pressure:	2235 psi *(154 bar)*	2110 psi *(146 bar)*
Power:	35.1 HP *(26.2 kW)*	37.0 HP *(27.6 kW)*

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	29.8	*756*
B	15.7	*400*
C	16.5	*419*
D	14.0	*355*
E	8.8	*223*
F	10.9	*276*
G	36.4	*925*
H	2.4	*60*
I	18.5	*471*
J	25.5	*649*
K	27.4	*696*
L	46.9	*1192*
M	23.6	*600*
N	39.5	*1003*
O	9.0	*229*
P	52.5	*1334*
Q	40.2	*1020*
R	33.1	*840*